






Original Article

# Contributions and challenges of peer teaching in occupational therapy students when conducting a socio-educational intervention project

*Contribuições e desafios do ensino entre pares em estudantes de terapia ocupacional na realização de um projeto de intervenção socioeducativa*

*Aportes y desafíos de la enseñanza de pares en estudiantes de terapia ocupacional cuando realizan un proyecto de intervención socioeducativa*

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## Abstract

**Introduction:** The versatility of peer tutoring is an attribute that allows this teaching-learning strategy to be used to meet different needs of university students, however, there is still a knowledge gap regarding its contributions when combined with other teaching methodologies. **Objective:** Analyze the contributions and challenges of peer tutoring when used as a learning support methodology in the framework of a socio-educational intervention project to reduce public stigma towards people with a psychiatric diagnosis. **Methodology:** Qualitative methodology producing data through an online questionnaire answered by 80 students, six peer tutors and six teachers participating in the experience. The data was subjected to a thematic content analysis. **Results:** Three central topics emerge: 1) attributes of peer tutoring that favor learning; 2) relationships between peer tutoring and project-based learning and 3) aspects that interfere with learning during a project. **Conclusions:** Peer mentoring is a strategy that used in the framework of project-based learning provides effective and meaningful support for the successful implementation of a socio-educational intervention. It is essential to

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prepare the mentors in their work by generating spaces for permanent feedback with the teaching staff to strengthen their cognitive and attitudinal competences, at the same time, it is necessary to train the mentees about the specific purposes of this strategy.

**Keywords:** Paired-Associate Learning, Mentors, Teachers, Students.

### **Resumo**

**Introdução:** A versatilidade da tutoria entre pares é um atributo que permite que esta estratégia de ensino-aprendizagem seja utilizada para responder a diferentes necessidades dos estudantes universitários, no entanto, existe ainda uma lacuna de conhecimento relativa aos seus contributos quando combinada com outras metodologias de ensino. **Objetivo:** Analisar as contribuições e desafios da tutoria entre pares quando utilizada como metodologia de apoio à aprendizagem no âmbito de um projeto de intervenção socioeducativa para a redução do estigma público face a pessoas com diagnóstico psiquiátrico. **Metodologia:** Metodologia qualitativa produzindo dados através de um questionário online respondido por 80 estudantes, seis tutores e seis professores participantes na experiência. Os dados foram submetidos a uma análise de conteúdo temática. **Resultados:** Emergiram três temas centrais: 1) atributos da tutoria de pares que favorecem a aprendizagem; 2) relações entre a tutoria de pares e a aprendizagem baseada em projetos e 3) aspectos que interferem na aprendizagem durante um projeto. **Conclusões:** A tutoria entre pares é uma estratégia que, utilizada no âmbito da aprendizagem baseada em projetos, proporciona um apoio eficaz e significativo para o sucesso da implementação de uma intervenção socioeducativa. É essencial preparar os mentores no seu trabalho, gerando espaços de retorno permanente com o pessoal docente para reforçar as suas competências cognitivas e atitudinais, ao mesmo tempo que é necessário educar os mentorandos sobre os objetivos específicos desta estratégia.

**Palavras-chave:** Aprendizagem por Associação de Pares, Mentores, Professores, Estudantes.

### **Resumen**

**Introducción:** La versatilidad de la enseñanza de pares es un atributo que le permite a esta estrategia de enseñanza-aprendizaje, ser usada para cubrir distintas necesidades del estudiantado universitario, sin embargo, aún existe una brecha de conocimiento en cuanto a sus aportes cuando se combina con otras metodologías de enseñanza. **Objetivo:** Analizar los aportes y desafíos de las tutorías de pares cuando se usan como metodología de apoyo al aprendizaje en el marco de un proyecto de intervención socioeducativa para reducir el estigma público hacia personas con diagnóstico psiquiátrico. **Metodología:** Metodología cualitativa produciendo datos a través de un cuestionario *on line* que responden 80 estudiantes, seis tutores pares y seis docentes participantes de la experiencia. Los datos se someten a un análisis de contenido temático. **Resultados:** Emergen tres temas centrales: 1) atributos de las tutorías de pares que favorecen el aprendizaje; 2) relaciones entre la tutoría de pares y el aprendizaje basado en proyectos y 3) aspectos que interfieren el aprendizaje durante un proyecto. **Conclusiones:** La tutoría de pares es una estrategia que usada en el marco del aprendizaje basado en proyectos entrega un apoyo efectivo y significativo para la ejecución adecuada de una intervención socioeducativa. Resulta

fundamental preparar a las/os tutoras/es en su labor generando espacios de retroalimentación permanente con el cuerpo docente para fortalecer sus competencias cognitivas y actitudinales, al mismo tiempo, es necesario educar a las/os tutoradas/os sobre los propósitos específicos de esta estrategia.

**Palabras clave:** Aprendizaje por Asociación de Pares, Mentores, Docentes, Estudiantes.

## Introduction

Peer-assisted learning corresponds to a variety of forms of cooperative learning among students who work together in small groups performing different roles (Topping, 2023). Among them are peer tutoring, which according to Álvarez (2018) is an active, adaptive and participatory learning strategy managed by the students who participate as tutor and tutee respectively, whose relationship is characterized by *parity*, since they are students of the same or different level who share an orientation towards learning; and *asymmetry*, since they have different training paths and establish different specific objectives in the tutor-tutee relationship.

Peer tutoring is characterized by stimulating the tutees to achieve higher and deeper learning, as well as to guide in the confrontation and resolution of problems (Byl & Topping, 2023). Some authors highlight that peer tutoring would not have significant differences in the learning acquired by students compared to the teaching of an experienced teacher (Rees et al., 2016); even when this strategy is used online (Veerabhadrapa et al., 2021). Others suggest that it can be much better when the tutor has a training background closer to the student being tutored (Stephens et al., 2016), that is, if they belong to the same level or training course.

In higher education, peer tutoring has been used in different settings, for different purposes and in different ways. In some cases, it is useful for facilitating the integration of first-year students into the university system (Estevam et al., 2018), as well as for promoting the retention and permanence of students in higher education institutions (Couchet, 2018). In other cases, it has been used to develop learning in skills and values with low-performing students (Benoit et al., 2019). Its application has successfully explored the evaluative processes in university students, encouraging greater participation and responsibility with their own training processes (Delgado et al., 2020), improving the quality of the products demanded from students in the teaching-learning processes (Vera-Cazorla, 2014; Usher & Barak, 2018), as well as the development of communication, motivation and critical thinking skills (Chang & Wongwatkit, 2023).

The data recently presented show the versatility of this teaching modality, which opens up a series of possibilities for its use at different levels of training and in different disciplines. In the training of occupational therapists, the field in which the present study is developed, the potential of this strategy has been scarcely explored when used among students of the same degree and in combination with other teaching-learning methodologies. The specialized literature reports that it has been used preferably in interprofessional education involving occupational therapy students, helping those being tutored to obtain higher rates of academic success and those acting as tutors to deepen their knowledge on the topics covered (de Oliveira et al., 2015); allowing peer tutors to approach the role of educators of

their own profession, and helping tutees to recognize the roles of other professions to improve interdisciplinary work (Pittenger et al., 2016).

For their part, Dunleavy et al. (2017) point out that first-year occupational therapy and physiotherapy students report greater confidence and identification with their future professional role when teaching rehabilitation assessments and interventions to second-year medical students. Fonda & Ross (2023) argue that when occupational therapy students are the ones who practically teach fall risks to final-year paramedic students, it allows the latter to develop knowledge, skills, and confidence in the management of clients at risk of falls, while also allowing them to recognize when to promptly refer their clients to occupational therapy. Kinirons et al. (2019) suggest that through peer teaching and alternating dissection between physiotherapy and occupational therapy students, effective combinations would result for learning macroscopic anatomy. Aguilar et al. (2023) report that when occupational therapy students of the same level tutor each other in the development of clinical skills in hand therapy, there is a positive impact on their confidence in clinical reasoning skills and therapeutic use of themselves.

This study is part of the need to generate knowledge about peer tutoring when used among occupational therapy students and, above all, when used as support for project-based learning, given that this combination of strategies has not yet been investigated in depth in the undergraduate training of this and other social-health professions.

## **Objective**

The objective of this research is to analyze the contributions and challenges of online peer tutoring during the development of a socio-educational intervention project to reduce public stigma towards people with a psychiatric diagnosis, based on the opinion of students, peer tutors and teachers involved in this educational experience.

## **General description of the experience**

The experience presented here is part of the mental health I subject in the third year of the occupational therapy degree taught in 3 different cities in Chile: Viña del Mar, Santiago and Concepción. The distribution of participants by location is shown below in the Table 1.

**Table 1.** Number and distribution of participants in the educational experience by location.

| <b>Participants</b> | <b>Viña del Mar</b> | <b>Santiago</b> | <b>Concepción</b> | <b>Total</b> |
|---------------------|---------------------|-----------------|-------------------|--------------|
| Students            | 66                  | 60              | 30                | 156          |
| Peer Tutors         | 5                   | 1               | 3                 | 9            |
| Teachers            | 3                   | 2               | 2                 | 7            |

**Source:** own elaboration.

The students of the subject, in groups of 3-4 people, designed, implemented and evaluated a socio-educational intervention for the reduction of public stigma in different social groups. The project was carried out in four stages and lasted 16 weeks:

1. Evaluation and/or diagnosis of the situation: the students carried out an evaluation in a specific social group, regarding the presence of stigmas that they have towards people

with psychiatric diagnoses. For the data production, the Questionnaire on Community Attitudes Towards People with Mental Disorders (in Spanish CAMI) was used, validated by Grandón-Fernández et al. (2016) for the general population in Chile.

2. Design of the socio-educational intervention: Once the information was produced, the data was analyzed to design a proposal for a socio-educational intervention regarding the reduction of the detected stigmas.
3. Implementation of the strategy: various socio-educational strategies were carried out, the characteristics of which were: being attractive, with clear language and content, messages related to promoting the destigmatization and recognition of human rights in various areas and/or spheres of daily and social life.
4. Evaluation of the results: finally, the students used a data production methodology that allows them to analyze the scope, contributions, obstacles and facilitators of the strategy used to reduce stigma in the participating population.

To offer greater theoretical support to the students, the contents associated with prejudices, stereotypes and stigma are reviewed in the first unit of the course, in a total of 12 teaching hours. This project seeks to achieve the following learning outcome: explain the relationship between stigma and the violation of rights and the emergence of strategies to reduce the social consequences of this situation. It was evaluated at the end of the semester through an oral group presentation.

From the beginning of the project, each work group had the pedagogical support of a tutor who is in the fifth year of the degree. To select these, an open call was made to all students at that level who have already met the requirements and learnt the subject on which this experience is based. In this process, the activities to be performed and the remuneration to be received were reported. The latter was possible thanks to the funds awarded in the 2023-10 teaching innovation research competition that made this study possible.

Each tutor student received guidance and supervision from the subject teachers to strengthen their knowledge and thus appropriately guide the students being tutored in the project objectives. The teaching team prepared a document as a recommendation guide to exercise the role of facilitator in the tutorial space, which was delivered and reviewed together with the peer tutors. Each tutor was in charge of 4-5 groups of students. The tutorials were carried out synchronously online, with a duration of approximately 1 hour, were mandatory and were distributed according to the support needs demanded by the socio-educational intervention project, as shown in the Table 2.

**Table 2.** Peer tutoring planning.

| Session | Topics to be discussed   |
|---------|--|
| 1       | Review assessment instrument, manage sample for instrument application, reading about stigma.  |
| 2       | Presentation of progress   |
| 3       | Application of the instrument by the students of the subject to a specific social group  |
| 4       | Data analysis for diagnosis  |
| 5       | Construction of the socio-educational material to be used  |
| 6       | Application of socio-educational material  |
| 7       | Evaluation of socio-educational material that reflects the effect of the intervention on the participants / preparation of presentation for final evaluation |

**Source:** own elaboration.

During the process, three meetings were held between the peer tutors and the principal researcher with the purpose of monitoring progress and resolving pedagogical difficulties of the students.

## **Methodology**

To develop this study, a qualitative methodological strategy was used with a socio-constructionist approach to knowledge, since it is of interest to analyze the intersubjective meanings that those involved give to the educational experience that they lived (Di Silvestre, 2012).

## **Participants in the study**

There are three key actors: the teachers of the subject, students in the role of tutors and students being tutored. Six teachers of the subject collaborate, one male and five female. They are distributed in two from each location. Two of them have taught the subject for five years, two for four years and the other two for two years. Four of them are full-time professors of the degree (formally hired by the university) and two of them are adjunct professors (they provide services by teaching hours). Six tutors of the study report, one male and five female. They are distributed in two from each location. For all of them, it is their first experience acting as peer tutors.

In the case of the students being tutored, 80 of them reported, which represents an answer rate of 51.2%. 91% (n=73) are women and 8.8% (n=7) are men. 30% (n=24) of them belong to the Santiago campus. 25% (n=20) to the Concepción campus and 45% (n=36) correspond to the Viña del Mar campus. 58.8% (n=47) stated that they had participated in between 4 to 6 peer tutoring sessions. 35% (n=28) between one to three tutoring sessions, 5% (n=4) between 10 to 12 tutoring sessions and 1.2% (n=1) between seven to nine tutoring sessions. It is important to note that although the original planning of the tutorials contemplated seven tutorials, the tutors carried out more given the difficulties that some groups of students presented in advancing the project. None of the students being tutored had previous experience of receiving peer teaching.

## **Instrument**

Online questionnaires were used to produce the information. Braun et al. (2021) argue that these facilitate the participation of a greater number of people, especially when they are geographically dispersed. They also allow open questions to be answered. The totality of the answers that can be received offers a wealth of data that deepens the analysis, and finally, it provides a sense of anonymity that allows for a more reliable answer. All of these reasons are considered relevant to this study and were considered in making the decision to use them.

They were designed on the Google Forms platform. The questionnaire for peer tutors and teachers consists of six questions. In the case of the tutored students, a mixed questionnaire was applied that included five qualitative questions and 14 quantitative and closed questions. The latter were not included in this study. All questions in the questionnaires were developed in reference to the specialized literature on peer tutoring, including: comprehensive learning (Cardozo-Ortiz, 2011), generic skills such as critical

thinking, decision-making and communication (Estigmar, 2016; Chang & Wongwatkit, 2023) and learning environment (Jawhari et al., 2021). The questions were designed to provoke reflective answers from the lived experience; they were subjected to expert judgment to fine-tune their wording and understanding before being distributed.

### **Data production and analysis procedure**

Given that it was of interest to offer the possibility of participating in the study to all those involved in the training experience (Otzen & Manterola, 2017), the questionnaires were sent by institutional email to all the protagonists. In the case of the teachers and peer tutors, the main researcher sent the invitation to participate through the WhatsApp application in which he shared communication groups with each of them. The instrument was available to be answered between the months of July and September 2023.

In the case of the students, an invitation was also sent through an announcement by the subject teachers on the digital learning management platform called CANVAS. For their part, each teacher in the classroom invited those called to participate; finally, the call was disseminated through the WhatsApp application among each of the work groups through the tutors. For this group, the questionnaires were available to be answered between June and August 2023.

Informed consent was included in each of the questionnaires used, so that if the participant accepted its content, he or she could access the instrument. If the participant did not accept, said access was disabled.

For data processing, a thematic content analysis of the qualitative answers to all questionnaires was used, using Braun & Clarke's (2022) six stages:

1. Familiarization with the data: Data is extracted from the Google Forms platform verbatim and exported to an Excel file for processing. At least two readings of the answers are made, simultaneously recording the thoughts generated and noting assumptions and perspectives while reading.
2. Systematic data coding: Codes were created by identifying a characteristic of the data that was relevant and pertinent. Codes were created for as many potential topics as possible. All data was coded.
3. Generating initial categories from coded data: Code lists were reviewed and tables were used to organize and generate potential categories. Codes and categories were reviewed and further developed for all data.
4. Develop and review topics: The data was examined to ensure it matches with the evident meaning of the entire data set, and any additional data that might have been omitted was categorized. Specific categories representing the topic were grouped together.
5. Refine, define and name topics: The data was allowed to sit for four weeks, after which time the topic codes and categories were reviewed and refined to ensure that the scope and content of the topic was representative of the entire data set.
6. Writing the report: During this stage, adjustments to theme terminology and supporting categories continued to be made, while referring to the originally coded data set and supporting citations.

In order to provide greater reliability and consistency to the analysis, the suggestions of Miles et al. (2014) and Piñero & Peroso (2021) are followed using two types of triangulation. On the one hand of actors so that the generation of codes, subtopics and initial topics integrate the opinion of the three participating actors; and on the other hand, the subtopics and topics were discussed and defined by the research team in several group sessions.

### **Ethical considerations**

In this study, the voluntary nature, anonymity and confidentiality of all participants have been respected, in accordance with the Helsinki declaration and decree 114 of 2010 of the Ministry of Health of the Government of Chile, which approves the regulations of law 20.120 on scientific research on human beings, their genome and prohibits human cloning. Therefore, the names and places of work and/or study of the participants are not used. The transcripts were stored in a drive to which only the research team has access. In this research, no known or foreseeable risks were observed for the participants. All these aspects, in addition to the objectives of the study, are contained in the informed consent that was signed by all collaborators.

### **Results**

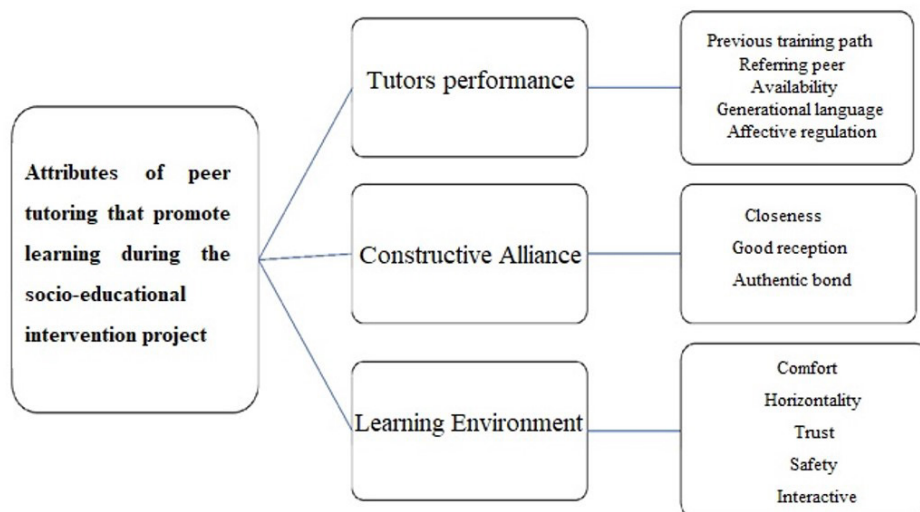
The findings of the qualitative analysis account for three topics and eight subtopics. To present the quotes, codes have been established that identify which participant they correspond to; In the case of students, the letter (S) corresponds, for teachers, the letter (T) and for tutors, the letters (TP), all of them accompanied by a number that was automatically assigned by Google Forms according to the order of time in which each participant answered the instrument.

### **Attributes of peer tutoring that promote learning during the socio-educational intervention project**

This topic presents the positive characteristics of peer tutoring, which, in the opinion of the participants, promote the development of learning in the context of the intervention carried out. Below in the Figure 1 is a summary of the subtopics and codes that make up this topic.

Peer tutoring as a support for the learning process within the framework of project-based learning reflects several characteristics that strengthen both learning and the development of the project itself. According to the participants, during peer tutoring a constructive alliance is generated mediated by three elements; the first of these corresponds to the rapprochement established between the actors who share the role of students: *“the contribution that is generated is from the accompaniment and closeness with peers”* (TP4). A second aspect is related to the fact that this is a strategy in which the opinions and reflections of the students being tutored are welcomed by the person who plays the role of tutor: *“... that attention is allowed and received from the tutors regarding the opinions of the students through moments of reflection and expression”* (TP1).





**Figure 1.** Subtopics and codes of topic 1.

**Source:** Own elaboration.

Finally, a bond is created that goes beyond the teaching role for which peer tutoring is designed: *“first of all, the tutoring not only served to provide information about the project but also to create bonds with each of the students”* (TP6), aspects that allow a genuine relationship that facilitates communication and the implications of their ideas in the field of intervention:

*The contribution of peer tutoring was very satisfactory for the students, since relating to a peer figure is absolutely different from relating to an authority figure such as teachers. This allowed the students to be more spontaneous in asking questions and clarifications about the intervention.* (T2).

For the participants in this study, peer tutoring produces an environment that promotes learning and is characterized by comfort, far from a stressful experience: *“peers promote continuous support, generate a feeling of validation and comfort”* (T4).

Another aspect that the participants consider that fosters an adequate environment for learning is related to the fact that this modality is characterized by increasing confidence in the students: *“being on par with the role of students, providing a space in which there is confidence to ask, guide and understand”* (TP2).

This attribute is facilitated because in the tutorial space a horizontal relationship is established between the figure of the tutor and the tutee that encourages the exchange of ideas and experiences: *“it generates a relaxed atmosphere, because being peers makes it easier to talk openly about stigma and know the real opinions of the students, and from there, to be able to build learning together”* (TP3).

The above, in the opinion of the participants, allows the students to feel more secure to learn, even to make mistakes without being judged: *“in addition to providing a safe space where classmates could feel comfortable commenting, without fear, on how they were feeling about the project”* (TP6). Finally, peer tutoring is considered to promote an

appropriate environment for learning since it is a dynamic and interactive methodology: *"and the way they interacted with us was very didactic and entertaining. We learned a lot"* (S43).

For the participants, there are some attributes that the tutors present that are associated with a satisfactory and significant learning experience, among which the following can be mentioned: the training path of the tutors that allowed timely decision making for the developed project:

*The tutors, through their expertise and personalized guidance, have provided clarity and answers to our concerns, which has enriched our knowledge and has helped us to more effectively address the challenges related to reducing stigma.* (S75).

The second aspect is directly related to the previous one, in that the training path that the tutors have and offer to those tutees transforms them into references that awakens the desire to reach that level of knowledge and experience, fostering the motivation to learn: *"the motivation that may arise in the groups about a peer guiding a process. Reflecting on them and vice versa"* (T1), *"it is valuable to receive inputs of knowledge and experience from them"* (S48).

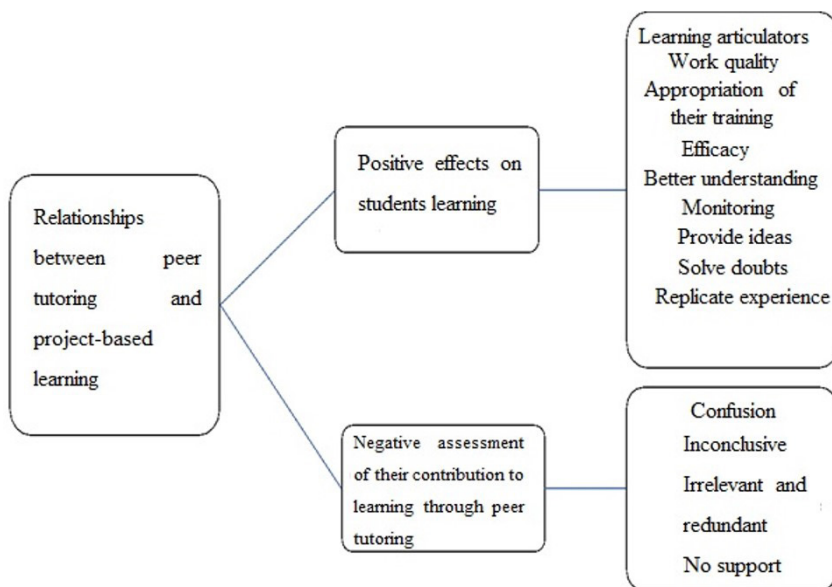
The third element corresponds to their permanent willingness to answer questions and solve doubts: *"OK, the tutor explained everything clearly and his concern that our work was carried out in the best way was evident and his great willingness to help and solve doubts was evident"* (S24).

Complementing the above attributes, it is identified that the tutors have the ability to emotionally regulate the students while they were carrying out the socio-educational intervention project to reduce stigma, especially when they must respond to other academic demands during the semester: *"the support provided by the tutors is very efficient, since it helps to make decisions, summarize, focus on a topic and in relation to mental health, it helps to reduce the anxiety of a semester's work"* (S4).

Last but not least, the use of language appropriate to the age of the students by their peer tutors is an element that makes it possible to more easily incorporate learning: *"the approach with a more colloquial language that "reaches" the generations"* (TP4).

## **Relationships between peer tutoring and project-based learning**

This topic refers to the relationships detected between the content reviewed in class with teachers, the tutorial space and the intervention project. Below in the Figure 2 is a summary of the subtopics and codes that make up this topic.



**Figure 2.** Subtopics and codes of topic 2.

**Source:** own elaboration.

The participants point out that peer tutoring is a space that allows the articulation of learning that circulates between the classroom and the execution of a socio-educational intervention project: *“in relation to peer tutors, ... it allowed them ... to generate an articulation between the students and us as teachers”* (T5).

On the other hand, one of the benefits is that it allows students to achieve the results that the academic activity demands from them: *“I certainly believe that the students achieved the objectives that were initially set, they were able to deliver a work with quality that was in line with what was planned”* (TP6).

At the same time, it offers greater effectiveness in the learning process: *“it was effective and helped to develop the project well”* (S32), since it allows a greater understanding of what they should do in the project: *“it was very good at guiding and orienting us in the project, it helped us to better understand what it was all about”* (S17).

All these elements produce an appropriation of their training process: *“it invites students to be more protagonists of their project”* (TP1).

Peer tutoring allows for systematic monitoring of the project that students develop, based on the support that tutors provide: *“I think it is a good contribution in the sense of incorporating students into the training process of other students, which allowed for monitoring of the projects”* (T5).

During the development of the tutorials, it is noted that they allow the exchange of ideas that favor the execution of the project: *“very good support, since they guide us if we are doing well in the completion of the work and they give us good advice”* (S49). At the same time, it allows the students to solve the doubts that appear in the development of the project: *“Very good! Dedicated and solved all the doubts”* (S72).

Finally, given the good results in the developed project and the favorable properties to facilitate learning, the participants estimate that peer tutoring is a teaching-learning

strategy that should be included in other subjects throughout the study plan: “I thought it was very good, it should be implemented in other subjects as well where this figure of tutor is seen” (S14).

Despite the favorable opinions just described, the participants consider that there are several aspects of this experience that give the impression that peer tutoring does not offer significant learning. For some of them, the tutorial space offered confusion rather than solutions or guidance to the task: “it is not very useful, it confused more than it helped” (S58). For others, the peer tutoring was not very conclusive, with little practical sense, becoming an unpleasant experience “if we had questions, when answering them, we were left with the same questions” (S20), “negative, since for these tutorials if one did not have questions, it was time wasted, there was no guidance or further advice” (S29).

For some participants, the information presented by the tutor was irrelevant and redundant, as they were instructions that had already been given by the teacher in the classroom: “it would have been better to dedicate an hour of class just to that, since the subject teacher had given the instructions about the work in class, so we already knew how to do the process” (S30). Finally, for some, this space did not contribute to their learning at all: “from my point of view, it was not much” (S61).

### Aspects that interfere with learning in peer tutoring

This topic addresses the aspects of peer tutoring that, in the opinion of participants, hinder the possibility of developing significant learning during a socio-educational intervention project. Below in the Figure 3 is a summary of the subtopics and codes that make up this topic.

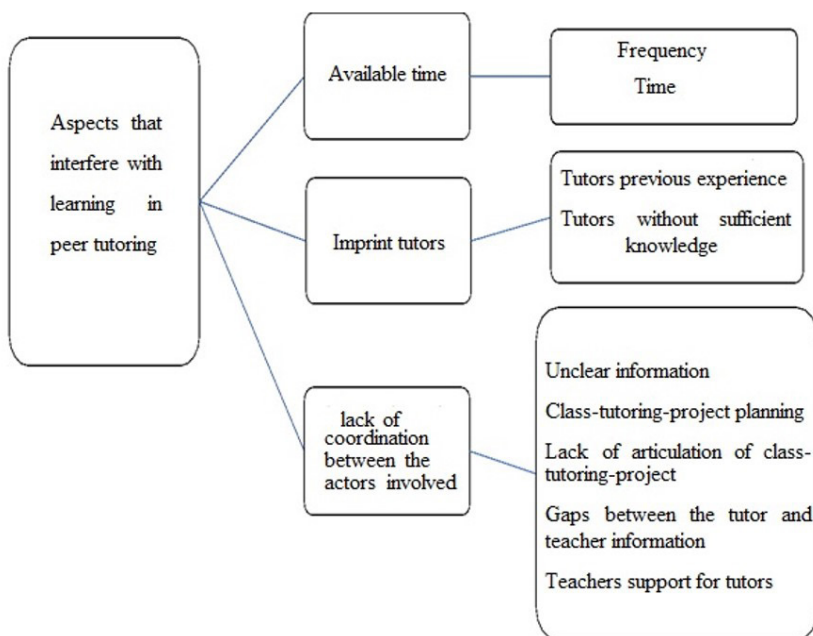


Figure 3. Subtopics and codes of topic 3.

Source: own elaboration.

Participants mention that it is difficult to allocate time to participate in peer tutoring, since they are not included in the usual class schedule for the subject, nor as independent work: *“it is carried out in spaces outside of classes, which makes it quite difficult for students to organize”* (T5). On the other hand, for some, the frequency of the tutoring should increase so that they can be better used: *“they are useful in general, but according to the students, they should be more frequent”* (T3).

Some tutors did not have the necessary knowledge to support the project, in the topics related to stigma and mental health, as well as in the aspects that the project required, offering ideas and alternatives that were not very consistent for its execution: *“they were present during the process in the classroom, but perhaps they lacked more mastery to guide questions and concerns”* (S70).

Another situation that participants highlight as an obstacle to learning is the lack of experience of the tutors and the students themselves with this type of methodology during their training process: *“the aspects that make it difficult are related to the fact that the peer tutors had not had experience with this modality”* (T5).

One of the elements that participants felt most strongly about was the lack of coordination between the actors involved in this experience. This was expressed in the fact that for some participants there was a disconnect between the contribution of the teachers and the project itself: *“Giving more information in class on how to carry out the interventions”* (S38).

This aspect is reinforced because, in the opinion of the participants, there was a lack of permanent and regular support from the teachers to the tutors that would allow the latter to be better prepared to answer questions: *“the tutors are good but the teachers do not give them enough information so that they have material to help us”* (S47).

Another aspect that reflects the lack of coordination between the actors involved in the study is the gaps in the information that the teachers gave to the students about the project:

*I think that in my particular case these tutorials confused me more than they contributed, since there was no coordination of the information that the tutor shared with the teacher. By correcting this point, perhaps the tutor's contribution could be improved.* (S62).

The last sub-topic that is estimated to interfere with the learning process corresponds to the organization of the training experience, which includes the circulation of unclear and imprecise information:

*Better instructions and communication, for example, our group was told that it could not be a family member and at the time of the presentation, there were two groups that did the intervention to their families. We were surprised because when we asked they said it was not possible, which made it much more difficult for us to carry out the work.* (S12).

Finally, an aspect to improve is the planning and coordination between the different instances in which the students participate in this experience, particularly between peer tutoring and the socio-educational intervention project: *“Better organization and phases of the project”* (S20). At the same time, it is necessary for teachers to be able to follow

and comply with the planning of the subject to improve the experience: “*the organization of the teachers and syllabus*” (TP4).

## **Discussion**

The results of this study offer insights into both the advantages and challenges of peer tutoring as a support strategy in the implementation of a socio-educational intervention project to reduce stigma towards people with a psychiatric diagnosis in third-year occupational therapy students.

Project-based learning favors the transfer of theoretical knowledge presented in classes and encourages interest in research (Rodríguez-Sandoval et al., 2010; Martins et al., 2018), since this methodology offers the opportunity to design solutions to real problems by collecting data and conducting additional consultations (MacLeod & van der Veen, 2020; Botella & Ramos, 2019). In this sense, this experience allows us to state that when students carry out a socio-educational intervention project and have the support of a peer tutor, conditions are provided that facilitate the development of said learning, since they are offered a space to search for information, propose solutions and debate their relevance, considering the situation and/or problem to be solved.

Peer tutoring is an efficient strategy for the development of learning since it tends to generate a more welcoming and trusting environment between tutor and tutee (Jawhari et al., 2021; Varghese & Zijlstra-Shaw, 2021; Valenzuela León et al., 2022). For its part, project-based learning allows students to develop their autonomy, which encourages them to be the protagonists of their own learning (Bell, 2010; Morales et al., 2022). The findings indicate that combining both methodologies enhances the development of these skills. The reasons for this would be given by the reception, understanding and empathy skills displayed by the tutors. In addition, they are strengthened when the tutors are willing to resolve doubts and connect through colloquial language appropriate to the age of the tutees.

Peers are recognized as positive role models who motivate learning among the tutees, which allows them to develop leadership skills that are useful for the performance of the students (Larkin & Hitch, 2019). The findings suggest that this motivation to reach out to peers is boosted when they have mastery of the topics they address, are able to deliver good ideas, articulate the subject content with the situations that arise during the development of the socio-educational intervention and resolve the doubts of the tutees. On the contrary, when these capacities are not demonstrated, they cause confusion, lack of meaning and interest in participating in peer tutoring.

For Marshall et al. (2021), peer teaching can be conditioned by the capacity for communication and feedback between students and tutors, by the ability to adequately manage the participation of students and by the fact of adequately preparing to resolve situations that are unique and new on the part of the tutors. The results presented confirm the above, therefore they are conditions that must be taken into account to manage expectations of teachers, tutors and tutees, especially when they are within the framework of a socio-educational intervention project such as the experience analyzed. To do this, it is essential to better prepare tutors in their work by generating spaces for permanent feedback with the teaching staff to strengthen their cognitive and attitudinal

skills. At the same time, it is necessary to train tutees about the specific purposes of peer tutoring and its importance in the development of expected learning.

Topping (2022) suggests that peer tutoring is a successful educational strategy, but it requires good coordination and communication between the actors involved in its development, with good planning, permanent supervision, support and financial resources. The findings corroborate these suggestions, at the same time warning about the importance of being included formally and systematically in the study plans and that its execution is carried out in times contemplated in the activities of the subject in which they are enrolled, otherwise they are perceived as an overload on the activities that the students carry out.

According to Estigmar (2016), the development of skills such as critical thinking, motivation, and collaborative skills benefit from peer teaching. In this sense, the results of this study suggest that these virtues are associated to a certain extent with the fact that students feel respected when giving their ideas and, above all, with the fact that in this space they receive emotional support that allows them to integrate the affective and cognitive aspects involved in learning.

Finally, it is relevant to mention that the participants did not make any negative or positive allusion to the fact that the tutorials were online and synchronous. Although this was not directly consulted, the fact that they are not found in the results seems to confirm that they have equal or better results than when they are carried out in person (Topping, 2023; Valderrama Nuñez et al., 2023).

## **Conclusions**

Peer tutoring is a strategy used in the framework of project-based learning that provides effective and significant support for the proper execution of a socio-educational intervention. Its use is suggested in a planned manner, with clear objectives and communicated in a timely manner to students, tutors and teachers. Its capacity to generate an adequate climate for students to learn theoretical-practical content, explore alternatives, share opinions and reflect on the actions they carry out in practice is valued.

In the field of training occupational therapists and other socio-health disciplines, this modality still needs to be studied in different combinations of teaching methodologies to identify and explore its potential. Among these, we can mention those associated with the development of research skills in undergraduate students, in the development of social and clinical intervention skills during curricular practices and professional practices in intermediate and advanced level students respectively. It is also important to promote studies at the different levels of training in the study plans (beginner, intermediate and advanced), so that it can be defined with greater certainty at what point in the training they offer the greatest usefulness for the acquisition of expected learning.

An area that was not addressed in this study but of interest in future research would be to identify the learning that students of occupational therapy and other careers in the social-health field acquire about public stigma when they carry out socio-educational intervention projects in the general population, emphasizing the contribution they can offer to reducing stigma and its negative effects on those who suffer from it with such actions.

A limitation that this study may present is that four of the researchers are teachers of the subject in which the educational innovation analyzed was implemented, therefore it is difficult for them to present a totally impartial perspective of the lived experience. In any case, it is estimated that their experience is a contribution to the study, since they offer a perspective that complements that of the teachers who are not part of the research team. Another limitation may be given by the fact that the bases of the contest that financed this study requested a report of results within a short period of time after having completed the experience. This situation could restrict the capacity of the participants to fully reflect on its benefits and challenges.

## References

- Aguilar, D., Kaskutas, K., & McAndrew, R. (2023). A dyad model of peer-assisted learning in an occupational therapy student experiential learning clinic for hand therapy. *Journal of Occupational Therapy Education*, 7(3), 1-13.
- Álvarez, A. (2018). Descifrar las tutorías entre pares. Concepto, aportes y desafíos. In C. Santiviago (Comp.), *Las tutorías entre pares como estrategia de apoyo y herramienta de transformación de la educación superior: la experiencia del programa de respaldo al aprendizaje* (pp. 63-78). Montevideo: Universidad de la República.
- Bell, S. (2010). Aprendizaje basado en proyectos para el siglo XXI: habilidades para el futuro. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39-43.
- Benoit, C., Castro, R., & Jaramillo, C. (2019). Aprendizaje y formación valórica en la enseñanza mediante tutorías entre pares. *Praxis y Saber*, 10(22), 89-113.
- Botella, A., & Ramos, P. (2019). Investigación-acción y aprendizaje basado en proyectos. Una revisión bibliográfica. *Perfiles Educativos*, 41(163), 127-141.
- Braun, V., & Clarke, V. (2022). *Thematic analysis a practical guide*. Thousand Oaks: SAGE Publications.
- Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2021). The online survey as a qualitative research tool. *International Journal of Social Research Methodology*, 24(6), 641-654.
- Byl, E., & Topping, K. (2023). Student perceptions of feedback in reciprocal or nonreciprocal peer tutoring or mentoring. *Studies in Educational Evaluation*, 79, 1-13.
- Cardozo-Ortiz, C. E. (2011). Tutoría entre pares como una estrategia pedagógica universitaria. *Educación y Educadores*, 14(2), 309-325.
- Chang, S. C., & Wongwatkit, C. (2023). Effects of a peer assessment-based scrum project learning system on computer programming's learning motivation, collaboration, communication, critical thinking, and cognitive load. *Education and Information Technologies*, 29, 7105-7128.
- Couchet, M. (2018). Las tutorías entre pares en la transformación de la enseñanza universitaria: de estructuras de apoyo a modelos pedagógicos alternativos. In C. Santiviago (Comp.), *Las tutorías entre pares como estrategia de apoyo y herramienta de transformación de la educación superior: la experiencia del programa de respaldo al aprendizaje* (pp. 48-63). Montevideo: Universidad de la República.
- Delgado, J., Medina, N., & Becerra, M. (2020). La evaluación por pares. Una alternativa de evaluación entre estudiantes universitarios. *Rehuso*, 5(2), 14-26.
- Di Silvestre, M. (2012). *Investigación cualitativa: fundamentos y metodología*. Santiago: PIMOedit.
- Dunleavy, K., Galen, S., Reid, K., Dhar, P., & DiZazzo-Miller, R. (2017). Impact of interprofessional peer teaching on physical and occupational therapy student's professional role identity. *Journal of Interprofessional Education & Practice*, 6, 1-5.
- Estevam, C., Basilio, A., Sticca, M., & Versuti, F. (2018). Programa de tutoría por pares no ensino superior: Estudo de caso Artigo. *Revista Brasileira de Orientação Profissional*, 19(2), 185-195.



- Estigmar, M. (2016). Peer-to-peer Teaching in Higher Education: A Critical Literature Review. *Mentoring & Tutoring, 24*(2), 124-136.
- Fonda, N., & Ross, L. (2023). Interprofessional peer assisted learning: paramedic students learning falls assessments from occupational therapy students. *Journal of Interprofessional Care, 37*(6), 1032-1035.
- Grandón-Fernández, P., Saldivia-Bórquez, S., Cova-Solar, F., Bustos-Navarrete, C., & Turra-Chávez, V. (2016). Análisis psicométrico y adaptación de la escala de actitudes comunitarias hacia la enfermedad mental (CAMI) en una muestra chilena. *Universitas Psychologica, 15*(2), 153-162.
- Jawhari, A. A., Saffhi, M. A., Magadmi, M. M., Alobaidi, R. H., Alghamdi, K. M., Basyouni, R. N., Saggaf, O. M., Yasawy, M. A., & Magadmi, R. M. (2021). Effect of peer-assisted learning on enhancing clinical research skills among medical students: students' and tutors' perceptions. *Advances in Medical Education and Practice, 12*, 685-696.
- Kinirons, S. A., Reddin, V. M., & Maguffin, J. (2019). Effects of Alternating dissection with peer teaching and faculty prosected cadaver demonstrations in a physical therapy and occupational therapy gross anatomy course. *Anatomical Sciences Education, 12*(5), 468-477.
- Larkin, H., & Hitch, D. (2019). Peer Assisted Study Sessions (PASS) preparing occupational therapy undergraduates for practice education: A novel application of a proven educational intervention. *Australian Occupational Therapy Journal, 66*(1), 100-109.
- MacLeod, M., & van der Veen, J. (2020). Scaffolding interdisciplinary project-based learning: a case study. *European Journal of Engineering Education, 45*(3), 363-377.
- Marshall, M., Dobbs-Oates, J., Kunberger, T., & Greene, J. (2021). The peer mentor experience: benefits and challenges in undergraduate programs. *Mentoring & Tutoring, 29*(1), 89-109.
- Martins, F., Martinho, W., Lopes, B., & Almeida, R. (2018). Implicación en ocupaciones sostenibles: cambios de hábitos de vida desde los espacios de la práctica educativa. *Cadernos Brasileiros de Terapia Ocupacional, 26*(2), 345-355. <http://dx.doi.org/10.4322/2526-8910.ctoAO1143>.
- Miles, M., Huberman, M., & Saldaña, J. (2014). *Qualitative data analysis. a methods sourcebook*. Thousand Oaks: Sage Publications.
- Morales, M. J., Cárdenas, M. P., Reyes, J., & Méndez, Y. (2022). Aprendizaje basado en proyectos como tendencia de enseñanza en la Educación Superior. *Universidad y Sociedad, 14*(S1), 53-58.
- Oliveira, C. A., de França Carvalho, C. P., Céspedes, I. C., de Oliveira, F., & Le Sueur-Maluf, L. (2015). Peer mentoring program in an interprofessional and interdisciplinary curriculum in Brazil. *Anatomical Sciences Education, 8*(4), 338-347.
- Otzen, T., & Manterola, C. (2017). Técnicas de Muestreo sobre una Población a Estudio. *International Journal of Morphology, 35*(1), 227-232.
- Piñero, L., & Perozo, L. (2021). Enfoque de no escisión en la investigación cualitativa. *Orbis: Revista de Ciencias Humanas, 17*(50), 5-16.
- Pittenger, L., Fierke, K., Kostka, S., & Jardine, P. (2016). Developing interprofessional facilitators and leaders: utilization of advanced health profession students as interprofessional (IPE) facilitators. *Currents in Pharmacy Teaching & Learning, 8*(1), 52-58.
- Rees, E., Quinn, P., Davies, B., & Fotheringham, V. (2016). ¿How does peer teaching compare to faculty teaching? A systematic review and meta-analysis. *Medical Teacher, 38*(8), 829-837.
- Rodríguez-Sandoval, E., Vargas-Solano, É., & Luna-Cortés, J. (2010). Evaluación de la estrategia "aprendizaje basado en proyectos". *Educación y Educadores, 13*(1), 13-25.
- Stephens, J., Hall, S., Andrade, M., & Border, S. (2016). Investigating the effect of distance between the teacher and learner on the student perception of a neuroanatomical near-peer teaching programme. *Surgical and Radiologic Anatomy, 38*, 1217-1223.
- Topping, K. J. (2022). Peer education and peer counselling for health and well-being: a review of reviews. *International Journal of Environmental Research and Public Health, 19*(10), 1-19.
- Topping, K. J. (2023). Advantages and disadvantages of online and face-to-face peer learning in higher education: a review. *Education Sciences, 13*(4), 1-13.

- Usher, M., & Barak, M. (2018). Peer assessment in a project-based engineering course: comparing between on-campus and online learning environments. *Assessment & Evaluation in Higher Education*, 43(5), 745-759.
- Valderrama Nuñez, C. M., Roa Hernández, K., Landeros Díaz, C., Reyes Macias, J., & Quilabrán Meneses, M. (2023). Tutorías virtuales postpandemia: implicancias en los aprendizajes de estudiantes de terapia ocupacional que cursan sus prácticas profesionales. *Cadernos Brasileiros de Terapia Ocupacional*, 31, e3460.
- Valenzuela León, J., Cirineu, C. T., & Navarro Hernández, N. (2022). Uso del yo como herramienta terapéutica: una experiencia formativa de terapia ocupacional en pregrado. *Cadernos Brasileiros de Terapia Ocupacional*, 30, e3280.
- Varghese, A. M., & Zijlstra-Shaw, S. (2021). Teaching to learn: using peer-assisted learning to complement the undergraduate dental curriculum. *European Journal of Dental Education*, 25, 762-767.
- Veerabhadrapa, S., Ramalu, D., Jin, E., Lyn, F., Valautham, D., Ramamurthy, P., Zamzuri, A. T. B., & Yadav, S. (2021). Effectiveness of online peer assisted learning as a teaching methodology for dental undergraduate students. *Educación Médica*, 22(6), 320-324.
- Vera-Cazorla, M. J. (2014). La evaluación formativa por pares en línea como apoyo para la enseñanza de la expresión escrita persuasiva. *Revista de Educación a Distancia*, (43), 1-17.

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